

# Documentation

**ESC Cost Core Training  
Developed By**

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## Module 15

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# 7 Steps of the Cost Estimating Process

1. Define and Plan
2. Specify Estimating Methodology
3. Calculate -- Including What-ifs & Alternatives
4. Time Phase in Base Year Dollars
5. Inflate to Then Year Dollars
- 6. Wrap Up Documentation**
7. Complete Final Reviews

# Why Document?

Estimate documentation provides an explanation & substantiation that serves three main purposes:

- To support decision-makers and facilitate their understanding of credibility of estimate, cost drivers, risk and uncertainty areas
- To facilitate explanation of cost growth, etc.
- To provide follow-on analysts a clear understanding of why and how previous cost estimates were derived

# Document “As You Go”

- Start documenting from the very beginning
- Continue to incrementally build your documentation
- Two Acceptable Styles
  - Put in the top level of detail initially, describing enough so you will not forget what you did. Later, go back and provide an additional level of detail.
  - Document everything in full detail as you go while it is still clear and fresh in your mind. (preferable)

# Substantiate the Estimate

- How were the costs derived?
- Why is the number good & why should anyone else believe it?
- Don't just state what approach or methodology was used. Explain why it makes sense to use that methodology and why it is a logical way to approach the estimate.
- Solid, convincing rationale - prove it.

# Substantiate the Time Phasing

- Time phasing is critical to determining how much to ask Congress for in any Fiscal Year.
- Explain and defend why you used a particular approach.

Example: You use a 60/40 Beta Curve.  
Why was that the right methodology to use?

# The Budget Process

- In many cases, your estimate will be entered into the budget process.
- Estimating & budgeting are not separate fields.

## Estimators should:

- understand full funding rules & incremental phasing rules
- know what years are important to time phasing
- know when & how things will be impacted
- use budget experts as valuable resources

# Level of Documentation

- Document at the level you derived the estimate.
  - If the estimate was derived by simply taking the total cost of an analogous Program and multiplying by 1.25, then the documentation should reflect that level of detail and nothing more.
  - If a grassroots staff-hour estimate was done with the help of appropriate specialists, then the various pieces of that estimate should be included in the documentation.

# Document All Ground Rules & Assumptions

- Why is it a ground rule or assumption?
- What is the basis of each?
- Is it based on a 5-year study or a hope?
- Why is it not part of the technical baseline of the Program? (if not, that usually implies some uncertainty)
- How uncertain is it?
- What is the risk associated with each?

# Provide Key Information to Decision-Makers

- Cost drivers & sensitivity analyses should be highlighted
- If an estimate hinges on one variable or if WBS items are driven by particular variables, emphasize those cost driving elements
- Sensitivity analyses should be run on all key variables, ground rule and assumptions

# Format

- All cost estimates should be documented in accordance with the general principles & criteria identified in AFMCI 65-201, as supplemented.
- The documentation package output by ACEIT is consistent with the prescribed guidelines.

# Replication

- Your cost estimate should be documented so that it can be replicated by other cost personnel who might “inherit” your Program.
- Although emphasis should always be on substantiation, clearly document your rationale, procedures, sources and algorithms.

# Effective Documentation

- Concise - statements of what was done should not be voluminous
- Might have numerous attachments for all the detailed calculations
  - if you are comparing 10 alternatives in ACE, print out workscreens, tables and the time phasing for all alternatives
  - can be a thick volume

# Write Well

- Obtain & understand information from other people
- Clearly convey your conclusions - get to the point
- Fuzzy logic leads to long documentation
  - can barely explain why certain steps were taken
  - not well thought out
  - cannot substantiate
  - poor methodology

# Cost Comparisons to the Approved Program

- Always include a comparison of your estimate to the Approved Program
  - Important information for decision-makers
- Know what shortfalls or excesses exist between your time phased estimates and the Approved Program
  - when you brief the estimate, you may better understand the reactions & questions

# Cost Tracks

- Include a track to the Program's last cost estimate
- Have technical parameters or ground rules or assumptions changed?
- This provides decision-makers with a rationale for increased or decreased requirements